What is claimed is:

1. A transmission line having a photonic band gap (PBG) coplanar waveguide (CPW) structure comprising:

a ground conductive layer formed on a substrate;

linear grooves formed on the ground conductive layer;

a signal line formed between the linear grooves;

rectangular grooves formed close to the signal line, and formed on the ground conductive layer; and

slots formed at the rectangular grooves respectively, and connecting the rectangular grooves and the linear groove.

2. The transmission line of claim 1, wherein the slots are formed at edges of the rectangular grooves respectively, are symmetric to each other and are placed close to each other.

3. The transmission line of claim 2, wherein four slots and four rectangular grooves are formed.

4. The transmission line of claim 1, wherein a characteristic impedance value of the transmission line is varied according to a distance between slots respectively formed at the rectangular grooves opposite to the linear grooves and a width of the slot, regardless of a width of the signal line.

5. The transmission line of claim 1, wherein a maximum reflection coefficient of an input terminal of the transmission line corresponds to a characteristic impedance value of the transmission line.

6. The transmission line of claim 1, wherein a characteristic impedance value of the transmission line increases, as a distance between slots formed at each rectangular groove and a width of each slot decrease.

7. The transmission line of claim 1, wherein the characteristic impedance value of the transmission line is changed, as a distance between the slots formed at each rectangular groove and a width of each slot are changed.

8. The transmission line of claim 1, wherein a characteristic impedance value of the transmission line is varied by changing a distance between the slots and a width of the slot, regardless of a width of the signal line.

9. The transmission line of claim 1, wherein a width of each slot and a distance between the slots are determined by a characteristic impedance value of the transmission line.

10. The transmission line of claim 1, wherein when a width of each slot and a distance between the slots decrease, a reflection coefficient of the transmission line increases.

11. The transmission line of claim 1, wherein the width of the slot is

50μm or less, and the distance between the slots is 100μm or less, in order to determine 132ohms as a characteristic impedance value of the transmission line.

12. A transmission line having a photonic band gap (PBG) coplanar waveguide (CPW) structure comprising:

a ground conductive layer formed on a substrate;

linear grooves formed on the ground conductive layer;

a signal line formed between the linear grooves;

rectangular grooves formed on the ground conductive layer; and

slots respectively formed at edges of the rectangular grooves, and connected to the linear grooves opposite to the rectangular grooves, wherein the slots are symmetric to each other and placed close to each other.

13. A method for fabricating a power divider comprising:

forming a resistance layer on a part of a substrate having a first conductive layer;

forming a seed layer on a part of the resistant layer and on both side surfaces of the resistance layer;

forming a second conductive layer on the seed layer;

forming rectangular grooves on the first conductive layer; and

forming a slot at the rectangular groove,

wherein the first conductive layer is formed close to the second conductive layer, and the slots are symmetric to each other and placed close to each other.

14. The method of claim 13, wherein the slots are formed at edges of

the rectangular grooves respectively.

15. The method of claim 13, wherein four slots and four rectangular grooves are formed.

16. The method of claim 13, wherein a distance between slots formed at each rectangular groove and a width of each slot are determined by a characteristic impedance value of the transmission line, regardless of a width of the second conductive layer.

17. A power divider comprising:

a substrate;

a first conductive layer formed on a part of the substrate;

a resistance layer formed on a part of the substrate;

a seed layer formed on a part of the resistance layer and on both side surfaces of the resistance layer;

a second conductive layer formed on the seed layer;

rectangular grooves formed on the first conductive layer; and

slots connected to the rectangular grooves,

wherein, the first conductive layer is formed close to the second conductive layer, and the slots are symmetric to each other and placed close to each other.

18. The power divider of claim 17, the slots are formed at edges of the rectangular grooves respectively.

19. The power divider of claim 17, wherein four slots and four rectangular grooves are formed.

20. The power divider of claim 17, wherein a distance between slots formed at each rectangular groove and a width of each slot are determined by a characteristic impedance value of the transmission line, regardless of a width of the second conductive layer.